

WHAT IS CLAIMED IS:

1. A decoupled anti-roll system for a vehicle suspension, comprising:
  - a left anti-roll bar configured to be fastened at one end to a left suspension arm;
  - 5 a right anti-roll bar configured to be fastened at one end to a right suspension arm;
  - a clutch mounted to connect or separate said left and right anti-roll bars;
  - oil pressure generating apparatus configured to generate oil pressure when the vehicle rolls;
  - 10 an accumulator connected to said oil pressure generating apparatus;
  - actuators for activating said clutch via the oil pressure generated from said oil pressure generating apparatus to connect or separate said left and right anti-roll bars;
  - 15 solenoid valves respectively mounted to open and close supplementary fluid passages disposed between said accumulator and said oil pressure generating apparatus, and to open and close operational fluid passages disposed between said oil pressure generating apparatus and said actuators;
  - sensors installed to detect relative ascent and descent of an axle of the vehicle suspension; and
  - 20 a controller for restricting said solenoid valves in response to a signal from said sensors.
2. The system as defined in claim 1, wherein each of said oil pressure generating apparatus further comprises:
  - an oil-filled cylinder configured to be mounted at one side to the axle;

a piston rod configured to be mounted at one side to a vehicle body with its head formed with orifices and valves for sliding inside said cylinder and absorbing impact according to the oil flux through said orifices and said valves; and

5 a compressed rod inserted into a compressed chamber formed inside said piston rod along the longitudinal direction for compressively furnishing oil to said actuators as said piston rod slides down.

3. The system as defined in claim 2, wherein each of said actuators further comprises:

10 a cylinder into which the oil pressure is applied from said compressed rod; and  
a piston rod for sliding in said cylinder and activating said clutch according to the oil pressure fed from said compressed rod to said cylinder.

4. The system as defined in claim 3, wherein each of said actuators further  
15 comprises:

a relief valve that discharges oil to said accumulator and reduces the inner pressure of said cylinder when the inner pressure of said cylinder is in excess of a predetermined value according to a high oil pressure fed from said compressed rod.

20 5. The system as defined in claim 3, wherein said clutch further comprises:  
a plurality of movable clutch discs which move and become engaged in response to said piston rod of said actuators; and  
passive clutch discs respectively formed at one end of said left and right anti-

roll bars for contacting said movable clutch discs in response to the movement of said moveable clutch discs.

6. The system as defined in claim 5, wherein the surface of each said clutch discs  
5 is spirally slanted to form a stair at a preset portion.

7. A decoupleable anti-roll system, comprising:  
a left anti-roll bar;  
a right anti-roll bar;  
10 a coupling mechanism disposed between said anti-roll bars and cooperating therewith to couple said bars in response to sensed vehicle rolls.

8. The system of claim 7, wherein said mechanism comprises a hydraulic clutch controlled by a controller cooperating with vehicle roll sensors.